Volume 182 1987

Contents

Letters to the Editor

Hard X-ray observations of the quasar 3C273
Damle, S.V., Kunte, P.K., Naranan, S., Sreekantan, B.V., Venkatesan, D. L1

The gradient of the small-scale velocity fluctuation in the solar atmosphere
Nesis, A., Mattig, W., Fleig, K.H., Wiehr, E. L5

Detection of shell-like features in the north-eastern halo of the Small Magellanic Cloud
Albers, H., Macgillivray, H.T., Beard, S.M., Chromey, F.R. L8

Have circumstellar envelopes been detected around nearby M-dwarfs?
Mariotti, J.-M., Perrier, C., Lacombe, F. L11

Vibrationally excited CS in IRC+10216
Turner, B.E. L15

Arcs, light echoes, and supergalaxies
Katz, J.I. L19

The light-echo model for luminous arcs
Milgrom, M. L21

Long term variability of the far-UV high velocity components in γCas (1978–1986)
Doazan, V., Rusconi, L., Sedmak, G., Thomas, R.N., Bourdonneau, B. L25

The Hα velocity structure during the first month of SN 1987a in the LMC
Hanuschik, R.W., Dachs, J. L29

Computed ultraviolet spectra for SN 1987A
Lucy, L.B. L31

The incompressibility of hot, neutron-rich nuclear matter
Vinas, X., Barranco, M., Treiner, J., Stringari, S. L34

New doublets in IRC+10216: Vibrationally excited C_4H?
Guélin, M., Cernicharo, J., Navarro, S., Woodward, D.R., Gottlieb, C.A., Thaddeus, P. L37

Theoretical studies of the faint features in the $S_0(0)$ line of H_2 observed in the Voyager IRIS mission
Schaefer, J. L40

The galactic distribution of Wolf-Rayet stars
Doom, C. L43

Z CMa resolved at near infrared wavelengths: one more piece to the puzzle
Leinert, Ch., Haas, M. L47

Constraints on the interpretation of the neutrino experiments by the optical observations of SN 1987a
Wampler, E.J., Truran, J.W., Lucy, L.B., Höflich, P., Hillebrandt, W. L51

The optical counterpart of the X-ray transient EXO 2030+375
Motch, C., Janot-Pacheco, E. L55

Detections of diffuse interstellar bands towards the SN 1987 A in the Large Magellanic Cloud
Vladilo, G., Crivellari, L., Molaro, P., Beckman, J.E. L59

1300 μm detection of the radio-quiet quasar 13349+2438
Chini, R., Kreysa, E., Salter, C.J. L63

Extragalactic astronomy

The evolution of clumpy gas in young elliptical galaxies
Kunze, R., Loose, H.-H., Yorke, H.W. 1

Lines of high excitation in NGC 4151: new measurements of [Fe X] and [Fe XIV]
Pelat, D., Alloin, D., Bica, E. 9

High resolution radio observations of NGC 4874
Feretti, L., Giovannini, G. 15

The diffuse radio emission from the Coma cluster
Schlickeiser, R., Sievers, A., Thiemann, H. 21

A study of the starburst galaxy ESO 495-G21 = He2–10
Johansson, L. 179

B and *V* photometry of two distant galaxy clusters with 6 m telescope plates
Iannicola, G., Kalloghlian, A., Nanni, D., Vignato, A. 189

Galactic structure and dynamics

Periodic orbits in a triaxial galaxy. III. Their stability
Robe, H. 202

Stellar clusters and associations

Evolutionary constraints for young stellar clusters. I. The luminosity function of H-burning stars
Brocato, E., Castellani, V. 36

Formation, structure and evolution of stars

The luminosity decay of radio pulsars and some related matters
Fokker, A.D. 41

Soft X-ray transients in quiescence: observations of Aql X-1 and Cen X-4
van Paradijs, J., Verbunt, F., Shafer, R.A., Arnaud, K.A. 47

A new approach to symbiotic stars
Nussbaumer, H., Vogel, M. 51

Disk formation at the magnetosphere of wind-fed pulsars: application to Vela X-1
Börner, G., Hayakawa, S., Nagase, F., Anzer, U. 63

Soft X-ray observations of the radio pulsar PSR 1055-52
Brinkmann, W., Ögelman, H. 71

(RN) Shape of the visual light curve and detection of a 1.35 cm H_2O line in single M Miras
Vardya, M.S. 75

Evolution of massive stars without convective core overshooting
Vanbeveren, D. 207

Discovery of soft X-ray oscillations in VW Hydri
van der Woerd, H., Heise, J., Paerels, F., Beuermann, K., van der Klis, M., Motch, C., van Paradijs, J. 219

Direct imagery of circumstellar shells around Ofpe/WN9 stars in the galaxy and in the LMC
Stahl, O. 229

Molecular hydrogen emission in Herbig-Haro complexes. II. The high latitude nebulosities HH 52/53/54
Sandell, G., Zealey, W.J., Williams, P.M., Taylor, K.N.R., Storey, J.M.V. 237

Grids of evolutionary models of massive stars with mass loss and overshooting. Properties of Wolf-Rayet stars sensitive to overshooting
Maeder, A., Meynet, G. 243

The *BVJK* light curves of the short-period eclipsing binary CG Cygni
Bedford, D.K., Fuensalida, J.J., Arévalo, M.J. 264

(RN) A new, distant dwarf nova: 2138-453
Hawkins, M.R.S., Véron, P. 271

Stellar atmospheres

Constraints for models of Be stars derived from UV and IRAS observations
Lamers, H.J.G.L.M., Waters, L.B.F.M. 80

Infrared photometry of late-type Wolf-Rayet stars
Williams, P.M., van der Hucht, K.A., Thé, P.S. 91

The relation between the visual polarisation and UV narrow absorption lines in irregular Be star variations
Brown, J.C., Henrichs, H.F. 107

(RN) Rotational modulation of the wind of the PMS star AB Aur: new observations in C IV and MG II
Catala, C., Praderie, F., Felenbok, P. 115

Silicon absorption in UV spectra of Ap Si stars
Artru, M.-C., Lanz, T. 273

The rapidly oscillating Ap stars as a test of stellar chromospheric heating mechanisms
Shore, S.N., Brown, D.N., Sonneborn, G., Gibson, D.M. 285

Diffuse matter in space (including H II regions and planetary nebulae)

Non-spherical supernova remnants. IV. Sequential explosions in OB associations
Tenorio-Tagle, G., Bodenheimer P., Różyczka, M. 120

Observations of cold dust in S 106
Mezger, P.G., Chini, R., Kreysa, E., Wink, J. 127

A multilevel study of ammonia in star forming regions. II. G34.3+0.2, a new "hot core"
Henkel, C., Wilson, T.L., Mauersberger, R. 137

Searches for interstellar and circumstellar metal oxides and chlorides
Millar, T.J., Elldér, J., Hjalmarson, A., Olofsson, H. 143

The 3.3 μm and 3.4 μm emission features in planetary nebulae
Martin, W. 290

Deuterated water in Orion-KL and NGC 7538
Henkel, C., Mauersberger, R., Wilson, T.L., Snyder, L.E., Menten, K.M., Wouterloot, J.G.A. 299

The Type-I planetary nebula Humason 1–2
Sabbadin, F., Cappellaro, E., Turatto, M. 305

S 201: an H II region produced by an ionization front eroding a molecular cloud
Felli, M., Hjellming, R.M., Cesaroni, R. 313

The Sun

The theory of magnetic coronal heating
Vekstein, G.E. 324

Some solar cycle phenomena related to the geomagnetic activity from 1868 to 1980. III. Quiet-days, fluctuating activity of the solar equatorial belt as the main origin of the solar wind flowing in the ecliptic plane
Simon, P.A., Legrand, J.P. 329

Solar soft X-ray pulsations
Harrison, R.A. 337

The solar system

A semi-analytical solution for the eccentricities and longitudes of the pericenter of the Uranian satellites
Lazzaro, D., Ferraz-Mello, S., Vieira Martins, R. 150

Voyager and Nançay observations of the Jovian radio-emission at different frequencies: solar wind effect and source extent
Genova, F., Zarka, P., Barrow, C.H. 159

Celestial mechanics and astrometry

Restrictions on the motion in the general four-body problem
Sergysels, R., Loks, A. 163

Physical and chemical processes

Unresolved dielectronic satellite lines of Ly α Ca XX resonance lines in high temperature plasmas
Volonté, S., Lion, J., Faucher, P., Dubau, J. 167

Refined diatomic partition functions. I. Calculational methods and H_2 and CO results
Irwin, A.W. 348

Instruments, data processing, and computational methods

The objective function implicit in the CLEAN algorithm
Marsh, K.A., Richardson, J.M. 174

Abstracts of articles which have been published in A. & A. Suppl. Ser. 70, No. 1

Spectral types of bright stars in the Small Magellanic Cloud Wing
Kontizas, E., Morgan, D.H., Dapergolas, A., Kontizas, M. 359

Spectral types of bright stars in the north-east arm of the Small Magellanic Cloud
Dapergolas, A., Kontizas, E., Kontizas, M., Morgan, D.H. 359

Physical studies of asteroids. XVI. Photoelectric photometry of 17 asteroids
Lagerkvist, C.-I., Hahn, G., Magnusson, P., Rickman, H. 359

Photometric variability of some CP stars
Heck, A., Mathys, G., Manfroid, J. 360

Optical region elemental abundance analyses of B and A stars. VII. The metallic-lined star 32 Aquarii
Kocer, D., Bolcal, C., Inelmen, E., Adelman, S.J. 360

Stark broadening trends along homologous sequences
Dimitrijević, M.S., Mihajlov, A.A., Popović, M.M. 360

The double system HD 135421
Rovithis, P., Rovithis-Livaniou, H. 360

An objective-prism survey for Hα-emission-line stars of a field in Puppis
Pettersson, B. 361

Flux density measurements of faint radio sources at 2.7 and 4.75 GHz
Forkert, T., Altschuler, D.R. 361

A catalogue of sunspot observations from 165 BC to AD 1684
Wittmann, A.D., Xu, Z.T. 361

Warm IRAS sources. I. A catalogue of AGN candidates from the point source catalog
de Grijp, M.H.K., Miley, G.K., Lub, J. 362

Ultraviolet properties of normal galaxies
Stryczyński, J. 362

UBV photometry of novae
van den Bergh, S., Younger, P.F. 362